Claims

1. Method for the fail-safe interfacing of a network element (MG)
comprising at least one component (ES0, ES1) which is configured
5   in a doubly redundant manner with a communication network (IP),
according to which at least two interface units (IF0, IF1, IF2,
IF3) are coupled to a respective component (ER0, ER1, ER2, ER3)
of the communication network IP via one respective connection
(L0, L1, L2, L3) and to the redundant components (ES0, ES1) of
10   the network element (MG) via one respective connection.

2. Method according to Claim 1
characterized in that
- if an interface unit (IF0 IF1, IF2, IF3) or a connection (L0,
15   L1, L2, L3) or a component (ER0, ER1, ER2, ER3) of the
communication network IP fails, the traffic transported via the
connection (L0, L1, L2, L3) affected by said failure is rerouted
to the unaffected connections (L0, L1, L2, L3), and
- the connections (L0, L1, L2, L3) are tailored to the network
20   element (MG), in that the capacity of the connections (L0, L1,
L2, L3) is established such that if one of the connections (L0,
L1, L2, L3) fails, the capacity of the remaining connections (L0,
L1, L2, L3) is sufficient to transport all the traffic to be
transported on the fail-safe interfacing.
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3. Method according to one of Claims 1 or 2
characterized in that
- a first (ES0) of the redundantly configured components (ES0,
ES1) is active and serves to switch payload data, and
30   - all other (ES1) redundantly configured components (ES0, ES1)
operate in standby mode and do not switch payload data and
- that if the active first component (ES0) fails, the switching
of payload data is moved to one of the other components (ES1),
whereby this other component (ES1) becomes the active component.
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4. Method according to one of Claims 1 to 3
characterized in that

the traffic is only routed to the active component (ES0) by the
interface units (IF0, IF1, IF2, IF3) in the transmission
direction from the communication network (IP) to the network
element (MG).

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5. Method according to one of Claims 1 to 3,
characterized in that
traffic is multiplied by the interface units (IF0, IF1, IF2, IF3)
in the transmission direction from the communication network (IP)

10   to the network element (MG) and is forwarded to all redundant
components (ES0, ES1), whereby the components (ES1) operating in
standby mode reject the traffic.

6. Method according to one of Claims 1 to 5

15   characterized in that
traffic from all redundant components (ES0, ES1) is received by
the interface units (IF0, IF1, IF2, IF3) in the transmission
direction from the network element (MG) to the communication
network (IP) and routed to the communication network (IP).

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7. Method according to one of Claims 1 to 5
characterized in that
only traffic from the active component (ES0) is received by the
interface units (IF0, IF1, IF2, IF3) in the transmission

25   direction from the network element (MG) to the communication
network (IP) and routed to the communication network (IP).

8. Method according to one of Claims 1 to 7
characterized in that

30   the communication network (IP) is a packet-switching
communication network.

9. Method according to Claim 8
characterized in that

35   IP packets or Ethernet frames or Ethernet frames which contain IP
packets are transported via the connections (L0, L1, L2, L3)

10. Network element (MG) having fail-safe interfacing with a communication network (IP), comprising at least one component (ES0, ES1), which is configured in an at least doubly redundant manner, having at least two interface units (IF0, IF1, IF2, IF3) with one respective connection (L0, L1, L2, L3) to one respective component (ER0, ER1, ER2, ER3) of the communication network (IP) for interfacing with the communication network (IP), and having one respective connection to the redundant components (ES0, ES1) of the network element (MG).

11. Network element (MG) according to Claim 10, comprising multipliers for traffic in the transmission direction from the communication network (IP) to the network element (IP) in addition to or integrated in the interface units (IF0, IF1, IF2, IF3).

12. Network element (MG) according to Claim 11, whereby the interface units (IF0, IF1, IF2, IF3) comprise means for connection to a packet-oriented communication network (IP) and the multipliers comprise means for multiplying IP-packets or Ethernet frames or Ethernet frames containing IP packets.